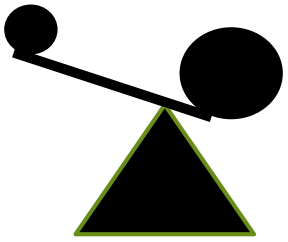
GC - Playing to Advantage



V3.1

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Introduction

- After a trial in 2021,WCF has approved the use of the Advantage GC Handicap game – see Rule 21 in 6th Edition of GC Rules
- Advantage GC is designed as an alternative to Extra Strokes to allow players with different handicaps to play on equal terms

Scope of Presentation

- To explain the Advantage rules
- To consider the implications on scoring
- To explain the Advantage GC table

Why Advantage?

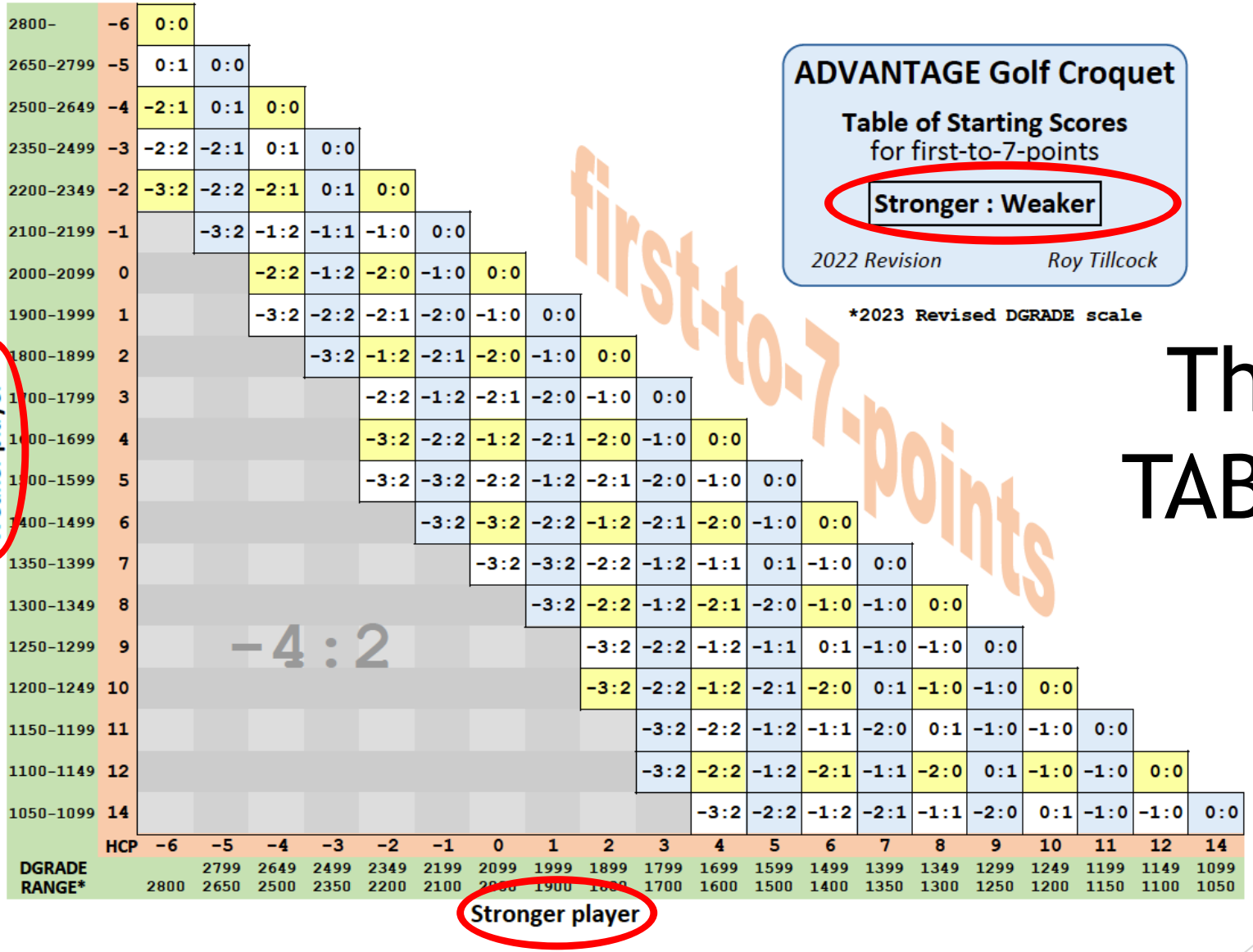
- Traditional use of extra strokes:
  - Alters the tactics employed
  - Requires management of extra stroke counters

- Advantage avoids the need for extra strokes by representing any handicap differences with a changed start score (from 0:0) according to a Table

Essence of Advantage Rules

- Stronger players may start with negative score, with weaker player starting with positive score, as per Table
- Game ends when one side reaches score of 7 (as normal)*
- Hoops played in same order but may need to go beyond Hoop 13

* Tables are also available to support ‘First-to-4’ and ‘First-to-10’ games

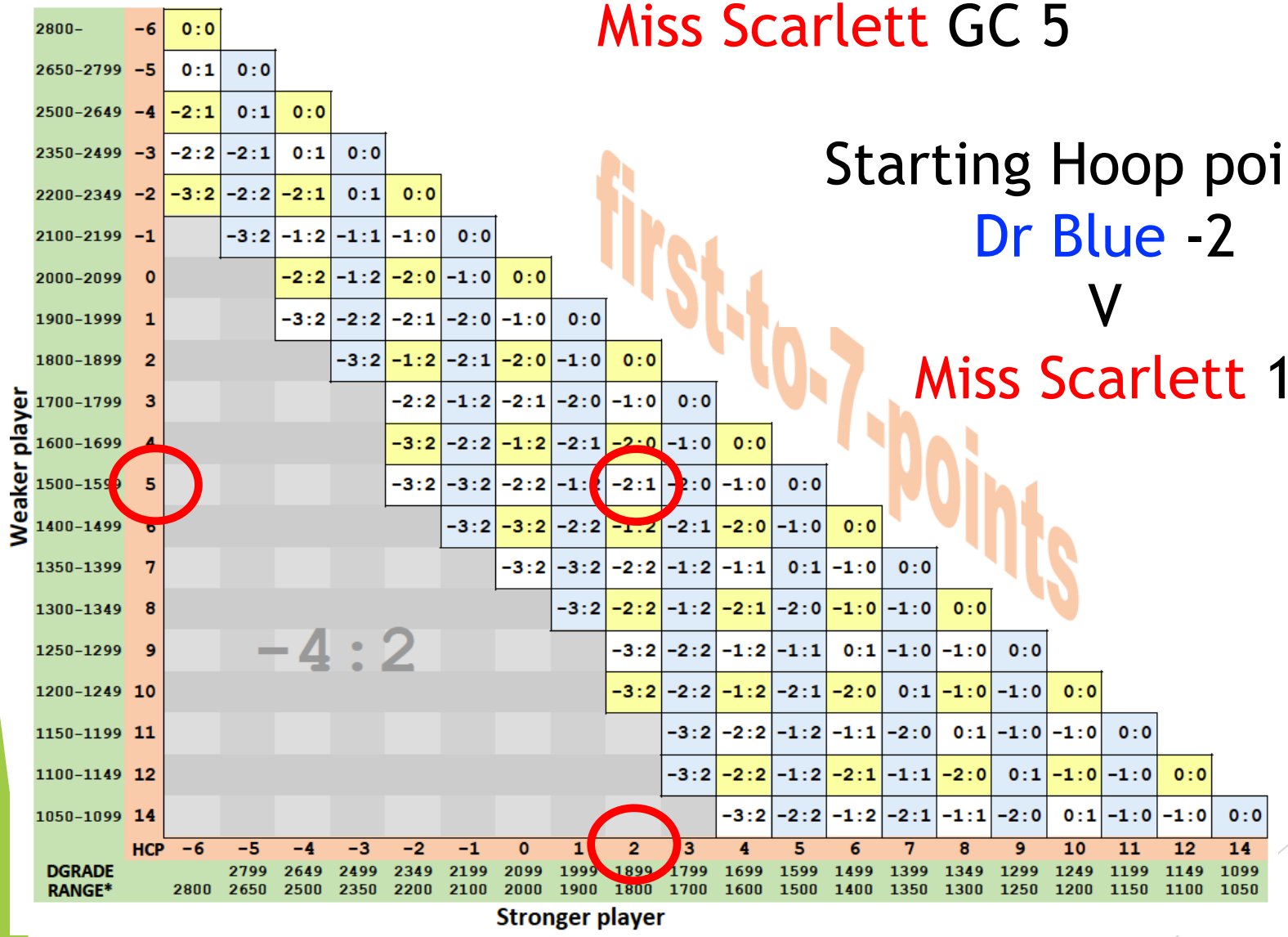


The TABLE

Note: There are further versions of the table for:
- First-to-4 and First-to-10 point games,
as well as extended versions for:
- Handicaps greater than 14

Dr Blue GC 2
V
Miss Scarlett GC 5

Starting Hoop points:
Dr Blue -2
V
Miss Scarlett 1



Summary

- Dr Blue (starting with -2) will have to run 9 hoops to win
- Miss Scarlett (starting with 1) will have to run 6 hoops to win

Another Example

- Rev Black GC 7

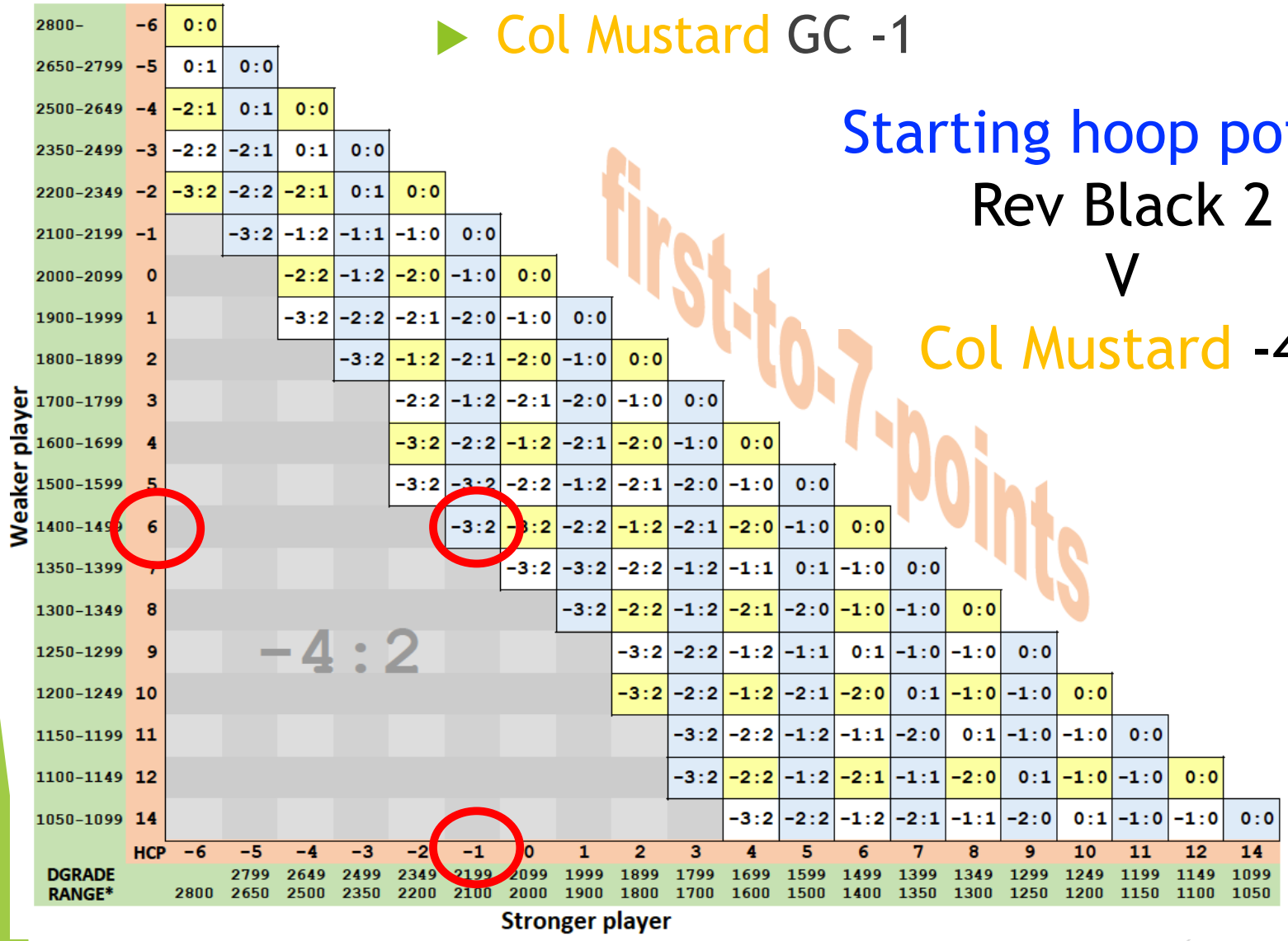
V

- Col Mustard GC -1

- Rev Black GC 7

V

- Col Mustard GC -1



Starting hoop points:

Rev Black 2

V

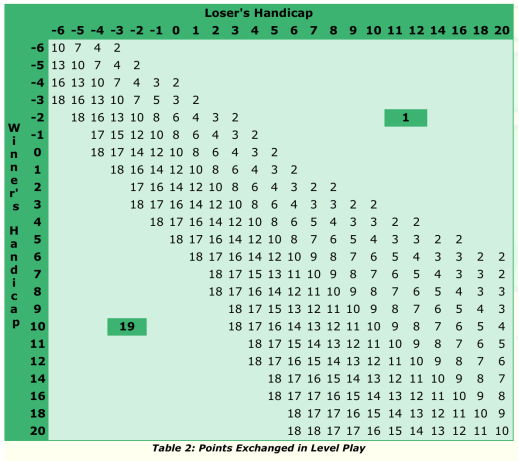
Col Mustard -4!

Q. How were the starting scores calculated?

A. These scores have been derived from (many millions of) computer simulated games with two specific criteria:

- To offer both players a 50% chance of winning
- To keep the length of game to a "normal" 13-point length

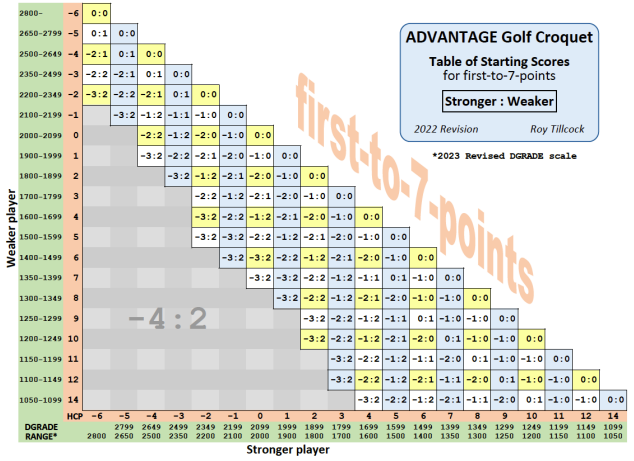
Q. What is the mathematical basis for the Starting Scores Table?



Loser's Handicap

Winner's Handicap	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10	11	12	14	16	18	20
-6	10	7	4	2																			
-5	13	10	7	4	2																		
-4	16	13	10	7	4	3	2																
-3	18	16	13	10	7	5	3	2															
-2		18	16	13	10	8	6	4	3	2								1					
-1			17	15	12	10	8	6	4	3	2												
0			18	17	14	12	10	8	6	4	3	2											
1				18	16	14	12	10	8	6	4	3	2										
2					17	16	14	12	10	8	6	4	3	2	2								
3					18	17	16	14	12	10	8	6	4	3	3	2	2						
4						18	17	16	14	12	10	8	6	5	4	3	3	2	2				
5							18	17	16	14	12	10	8	7	6	5	4	3	3	2	2		
6								18	17	16	14	12	10	9	8	7	6	5	4	3	3	2	2
7									18	17	15	13	11	10	9	8	7	6	5	4	3	3	2
8									18	17	16	14	12	11	10	9	8	7	6	5	4	3	3
9										18	17	15	13	12	11	10	9	8	7	6	5	4	3
10					19					18	17	16	14	13	12	11	10	9	8	7	6	5	4
11											18	17	15	14	13	12	11	10	9	8	7	6	5
12											18	17	16	15	14	13	12	11	10	9	8	7	6
14												18	17	16	15	14	13	12	11	10	9	8	7
16												18	17	17	16	15	14	13	12	11	10	9	8
18													18	17	17	16	15	14	13	12	11	10	9
20													18	18	17	17	16	15	14	13	12	11	10

Table 2: Points Exchanged in Level Play



- The Points Exchanged table on the Handicap Card served as the start point
- Each starting score is derived from the corresponding number in this table
- NB. Any changes made to the Starting Score given will invalidate the result

Games may extend beyond Hoop 13 – see this example

Starting hoop points:
Rev Black 2
V
Col Mustard -4

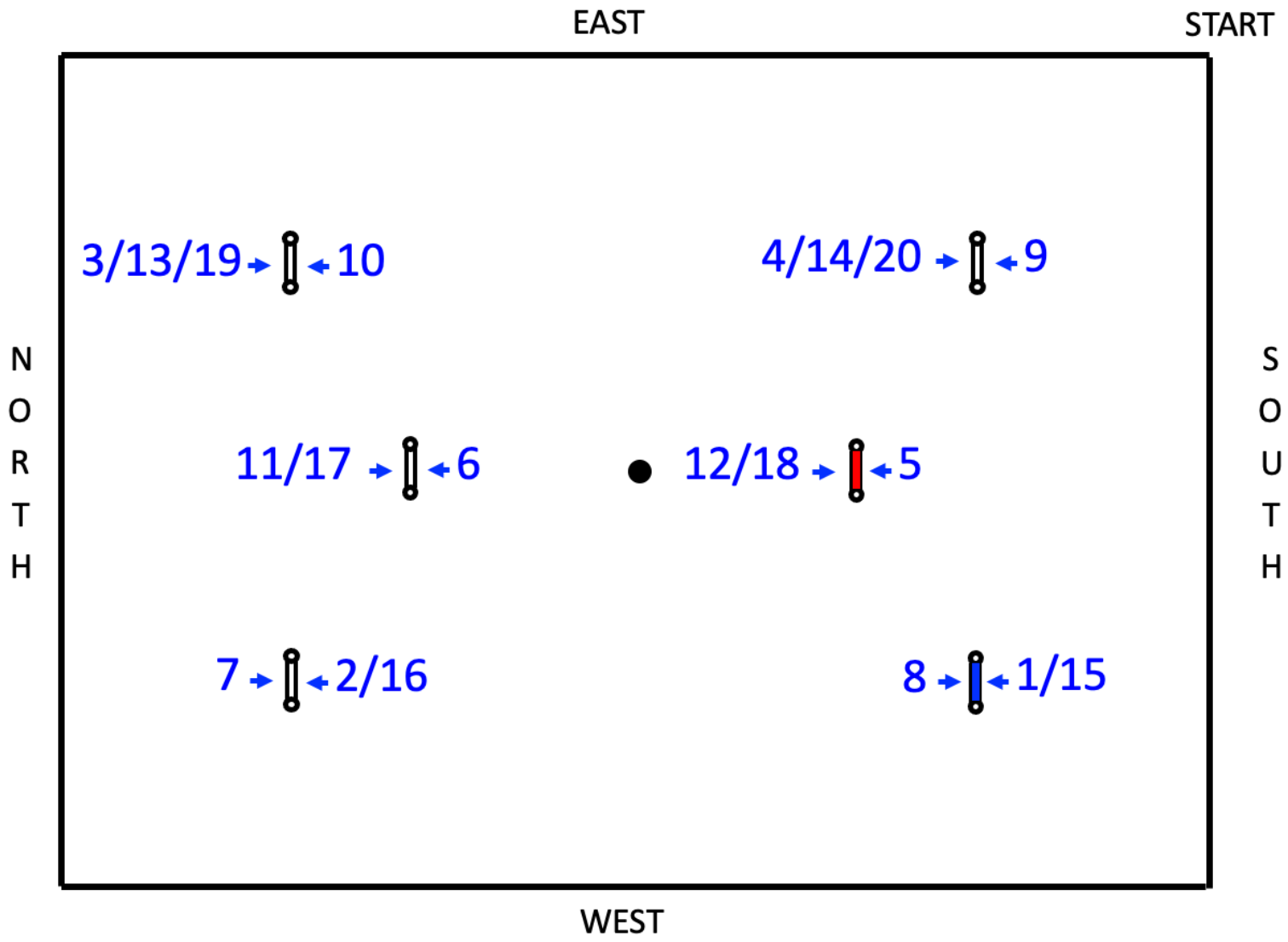
Score:
Rev Black 6
Col Mustard 6

No of actual hoops run:
Rev Black 4
Col Mustard 10

No of hoops run:
4 + 10 = 14

So deciding hoop
= Hoop 15!

Hoop Numbers



Scoring

- Before start of game confirm the arrangements for keeping the score. (N.B. This may be mandated by the organising body)
- Scoring with negative numbers needs to be recognised (e.g. -2, -1, 0, 1, 2 etc.)
- Important to be clear about the score after each hoop

[GC 6th Ed, Rule 7.8] Both sides are responsible for keeping the score. After each point is scored, the side for whom the point has been scored (or a referee, if present) should announce the score or, if in use, attach a scoring clip to the hoop or ensure that a scoreboard is updated.

Best convention is to announce stronger player's score first

The Advised Method of Scoring

- Prior to commencing the game, represent the starting score by placing the corresponding number of positive start scoring clips on Advantage Post at Start, and on the centre peg extension for negative start scoring clips
- Additional scoring clips are added to the hoops in the usual way as they are run
- NB. More scoring clips required than normal!

An Advantage Post by the start

Used for Positive Scoring Clips for weaker side

- Negative clips go on Centre Peg for stronger side
- Illustration shows a starting score of -2

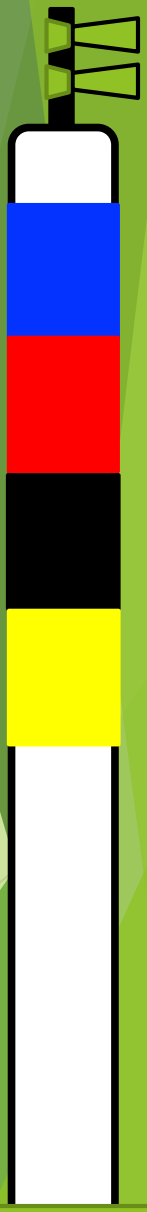
The score can be confirmed at any stage in the game:

1. Count clips on hoops in the usual way (do not forget to put them on!)
2. For a player with a positive start:

Add number of clips on Advantage Post

3. For a player with a negative start:

Subtract number of clips on Centre Peg



Checking the Score Algorithm

- Total of current scores =
- in Level / Handicap play:
  - Last hoop run
- in Advantage play:
  - Last hoop run +/- **the total of starting scores**

Checking the Score – Example 1 using the Last Hoop Run

- Two examples after Hoop 5 has been run:
- Example 1
  - Starting score -2 : 0 minus 2 plus 0 = minus 2
  - Last Hoop Run 5
  - Total of current scores minus 2 plus 5 = plus 3
- Example 2
  - Starting score -1 : 2 minus 1 plus 2 = plus 1
  - Last Hoop Run 5
  - Total of current scores plus 1 plus 5 = plus 6

Checking the Score – Example 2 using an Adjusted Hoop Number

- Reconcile the current score in usual way by using the adjusted hoop number
- Know the total of starting scores at the beginning of a game
- Example 1
  - Starting score: minus 2 : 0
  - Total starting score: minus 2
  - Adjusted hoop number = last hoop run minus 2
- Example 2
  - Starting score: minus 1 : plus 2
  - Total starting score: plus 1
  - Adjusted hoop number = last hoop run plus 1
- Example 3
  - Starting at -1 : 1, or -2 : 2, or 0 : 0
  - No adjustment required

Doubles

- A doubles game can be played by calculating the mean handicap for each team (half the sum of the two handicaps) with halves rounded up
- (Players without handicaps can first use the table to convert their DGrade to handicap)
- The starting score for each team can then be obtained from the table using the mean handicaps

Example Doubles Start Score Calculation

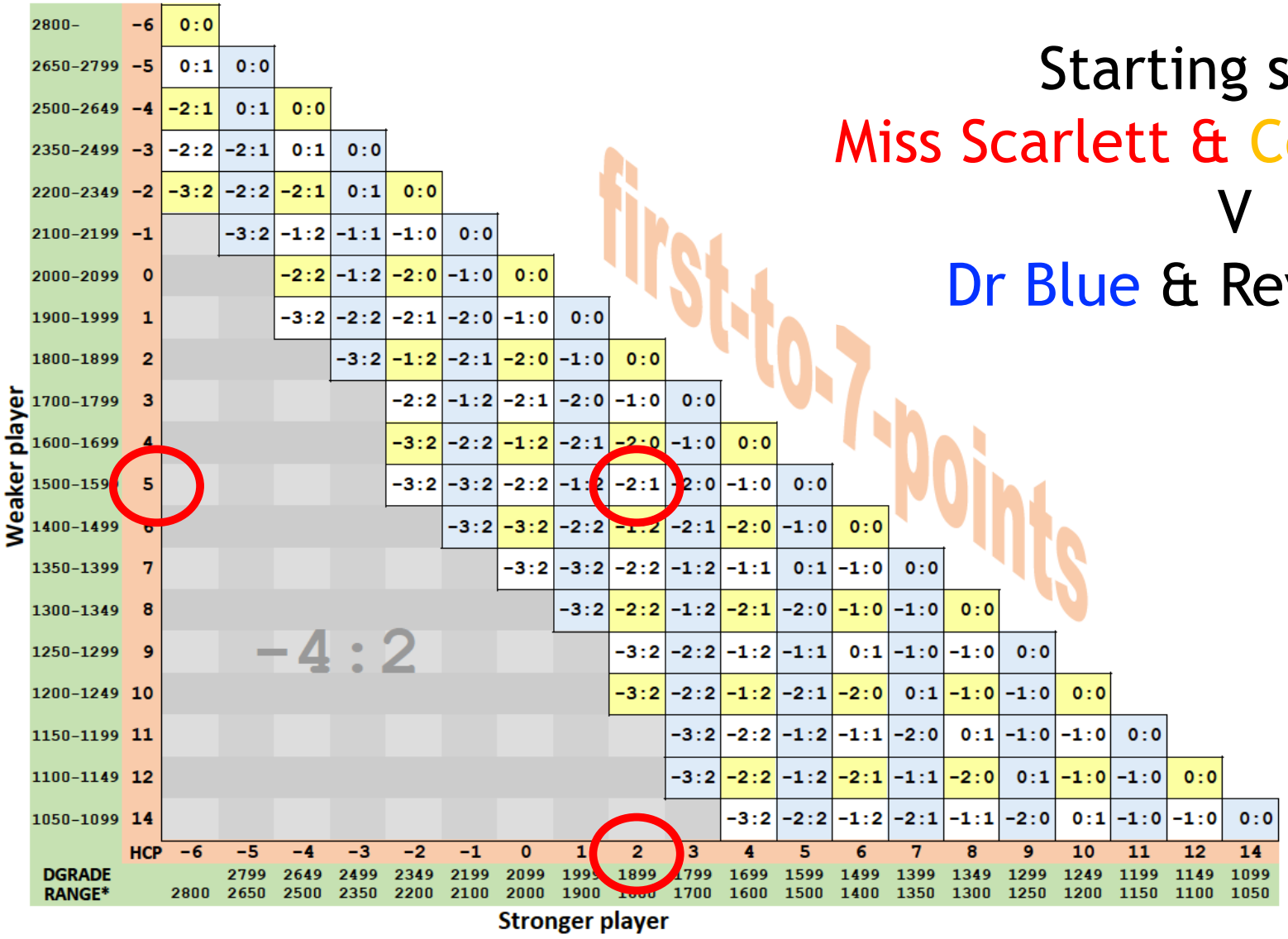
- Handicaps:
  - Dr Blue GC 2
  - Miss Scarlett GC 5
  - Rev Black GC 7
  - Col Mustard GC -1

- Sides' Mean Handicaps:
  - Dr Blue & Rev Black (2+7)/2 = 4.5 rounded = **5**
  - Miss Scarlett & Col Mustard (5+(-1))/2 = **2**

Mean handicaps:

Dr Blue & Rev Black 5

Miss Scarlett & Col Mustard 2



Starting score:

Miss Scarlett & Col Mustard -2

V

Dr Blue & Rev Black 1

Time Limits

- Most forms of time-limited handicap games are intrinsically unfair and WCF strongly advise that time limits are NOT used in Advantage GC for that reason
- Should the need arise to terminate unfinished games, the winner should NOT be decided on the current score
- Instead, compare, for each player, the ratio of hoops actually run to the total number needed to win at the start, the player with the higher ratio being declared the winner

EXAMPLE 1 USING RATIOS OF CALCULATING THE WINNER OF AN UNFINISHED GAME

- Col Mustard (Stronger Player) starting score -4
- Rev Black (Weaker Player) starting score 2
- Col Mustard needs 11 to win
- Rev Black needs 5 to win
- Game stops on time score at 0 : 4
- Col Mustard has run 4; Rev Black has run 2
- Ratios:
  - Col Mustard 4/11 = 0.363
  - Rev Black 2/5 = 0.400
- Result Rev Black, with higher ratio, is WINNER!

Alternative* method using ‘products’ (i.e. no division required!)

- Method uses the pre-determined starting scores
- Allows the calculation to be quickly completed at any time by counting the number of hoops run
  - Products are calculated using:
    - Opponent’s starting score
    - Own sides’ hoops run

*See Appendix to How-to-play Advantage

ALTERNATIVE* METHOD OF CALCULATING THE WINNER OF AN UNFINISHED GAME

- For each team, calculate the product by:
  - Opponent's number of hoops needed to be run at the start

    MULTIPLIED BY
  - Own side's number of hoops run
- Winner is:
  - The side with the greatest product

*See Appendix to How-to-play Advantage

EXAMPLE 2 USING PRODUCTS FOR CALCULATING THE WINNER OF AN UNFINISHED GAME

- Col Mustard's (Stronger Player) starting score -4,
  - so needs to run 11 hoops to win
- Rev Black's (Weaker Player) starting score 2,
  - so needs to run 5 hoops to win
- Game stops on time with score at 0 : 4
- Col Mustard has run 4; Rev Black has run 2
- Required 'products':
  - Col Mustard 5 x 4 = 20
  - Rev Black 11 x 2 = 22
- Result Rev Black, with higher product, is WINNER!

Note: Col Mustard's 'hoops run' (4) is multiplied by Rev Black's 'hoops needed to win'(5), and vice versa

EXAMPLE 3 USING PRODUCTS FOR CALCULATING THE WINNER OF AN UNFINISHED DRAWN GAME

- Dr Blue's (Stronger) starting score -2,
  - so needs 9 to win
- Miss Scarlett's (Weaker) starting score 1,
  - so needs 6 to win
- Game stops on time with score at 4 : 5
- Dr Blue (Stronger) has run 6; Miss Scarlett (Weaker) has run 4
- Required products:
  - Dr Blue (Stronger) 6 x 6 = 36
  - Miss Scarlett (Weaker) 9 x 4 = 36
- RESULT A DRAW
- If a drawn game is unacceptable:
  - The winner of the next hoop in order is the winner of the game

Handicap Cards

- All official Club, Federation and CA games go on your handicap card (worth 10 points)
- Use ‘A’ instead of ‘H’ in the Type of Game column

Summary

- Advantage rules avoid the need for Extra Strokes
- Use table to establish starting score
- Keep the score clearly
- Maintain handicap card using ‘A’

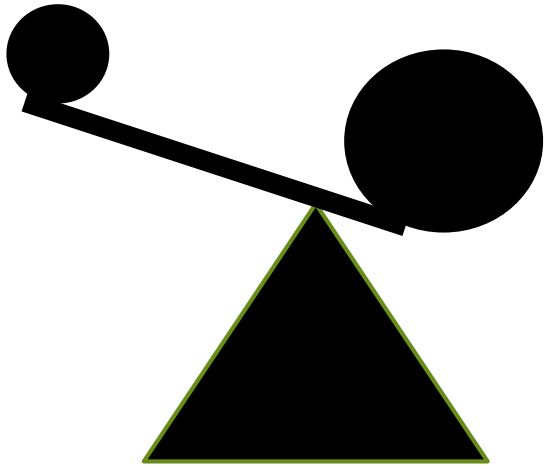
Useful links

- CA website:

  https://www.croquet.org.uk/?p=games/golf/advantage
- Advantage starting score tables and information on the WCF website: https://worldcroquet.org/advantagegc
- Starting Score Calculator: https://chc.eu.pythonanywhere.com

GC – Playing to Advantage

The End



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